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REPORT OF GENERAL SERVICE WORK AND EXTENSION

FOR CALENDAR YEAR 1939

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K.S.
RCH
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PCJ
EGS

Forest Insect Laboratory
445 U. S. Courthouse
Portland, Oregon

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REPORT OF GENERAL SERVICE WORK AND EXTENSION
FOR CALENDAR YEAR 1939

By
R. L. Furniss
Assistant Entomologist
Bureau of Entomology and Plant Quarantine

Forest Insect Laboratory
445 U. S. Courthouse
Portland, Oregon
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REPORT OF GENERAL SERVICE WORK AND EXTENSION FOR CALENDAR YEAR 1939

This is the fourth annual summary of requests for general information that have been received at the Portland forest insect laboratory. The same method of treatment that has been followed in the past is again employed. That is, all requests are included except those for specific published material, or those concerning control and surveys originating from cooperators.

The object of this series of reports is twofold. First, the recording of the various requests serves to account for the considerable amount of time that is necessarily spent upon general service work. Second, by cataloging the requests year after year it is possible to assemble much valuable information on certain minor forest insect pests in the Pacific Northwest.

During 1939 a total of 249 separate calls, involving 264 subjects, were received. One hundred and fifty-nine, or 60 percent of these, were in the field of forest entomology. As compared with last year, this represents a slight increase in the number of calls received, but the proportion of forest insect problems remained constant.

There was a considerable increase in the number of letters that were sent out in answer to requests. One hundred and six letters were sent in 1939, whereas only 61 were required in 1938. There was a dropping off in the number of examinations that were made, largely because of decreased work on the carpenter ant control problem. During 1939, examinations were made in 30 cases, a decrease of 18 from the 48 that were made in 1938.

In the course of the past year, approximately 375 copies of more than 20 different publications, reports, etc., were sent out in response to direct requests (see appendix 1).

As in the past, a number of valuable records were obtained. Some of the more noteworthy of these concerned: (1) An outbreak of the Douglas fir beetle along the Oregon coast, (2) Cylindrocopturus and drought injury to Douglas fir in the Puget Sound Basin, (3) a continued increase of Lyctus and powder-post beetle damage to wood products, and (4) numerous records of termite and carpenter ant damage to buildings. Several other particularly interesting records were obtained and are listed in the discussion.

Other service and contact work included several talks on various phases of the station program. A number of forestry and entomological meetings were attended. An exhibit of forest insect pests in the Douglas fir region was prepared for the Western Washington State Fair.

INSECTS AFFECTING FOREST TREES

A total of 33 requests, the same number as last year, were received concerning 18 species in this group of insects.

Dendroctonus pseudotsugae Hopk. and Melanophila drummondi (Kby.). During April, May, and June abundant group killing of Douglas fir along the central and southern Oregon coast was reported from four sources. The prevalence of these groups was substantiated on May 19 and 20, when an examination was made of stands on the Siskiyou and

Siuslaw National Forests. Trees in some of the groups were sampled and found to contain D. pseudotsugae and M. drummondi. The outbreak is suspected of having developed from a population increase in trees that were killed by numerous large fires that burned along the coast during the fall of 1936. Other possible contributing factors may have been a severe drought during the fall of 1936 and a silver thaw, also in 1936, that caused excessive winter breakage in young stands.

Cylindrocopturus sp. and drought. The excessively dry summer of 1938 caused the death of much Douglas fir reproduction in the prairie district of the Puget Sound Basin. This drought injury was supplemented by abundant insect damage which was caused by several species, but particularly by a weevil, Cylindrocopturus sp. The presence of this weevil in many of the stricken trees occasioned ten inquiries as to the cause and cure of the killing. There was also considerable speculation in the editorial columns of the local newspapers concerning the dying trees. In response to the various requests, a comprehensive memorandum on the situation was prepared and distributed to those especially interested. During 1939 the biology of Cylindrocopturus sp. on Douglas fir was worked out at La Grande, Wash., and an office report has been prepared on this subject.

Malacosoma spp. Although several species of Malacosoma occurred in epidemic numbers in Oregon and Washington, only three requests were received concerning them. In one case M. disstria Hbn. was reported as abundant on native cottonwoods near the head of Lake Chelan, Wash. In the two other cases this same insect was reported defoliating fruit trees in the vicinity of Portland, Oreg.

Other records of tent caterpillar outbreaks were taken by members of the station staff. Malacosoma fragilis Stretch caused severe defoliation of bitterbrush (Purshia tridentata) on the Deschutes National Forest, Oreg. M. disstria extensively defoliated willows along the lower Columbia River (see figs. 1 and 2) and was moderately abundant on willows in Coos County, Oreg. M. pluvialis Dyar was extremely abundant in the Puget Sound Basin of Washington and moderately abundant along the Oregon coast. In both of these areas the preferred host was alder. A moderate infestation of oaks by M. constricta Stretch was noted in the Rogue River Valley in Josephine County, Oreg.

Halisidota argentata Pack. This defoliator was not particularly abundant during the past year. Two instances of light infestation of Douglas fir near Portland and one of lodgepole pine in Tillamook County, Oreg., were reported.

Hemerocampa pseudotsugata McD. Although no inquiries were received concerning H. pseudotsugata, general observations were continued on the progress of the outbreak that was reported in 1938 on the Malheur National Forest. Defoliation of Douglas firs and true firs increased greatly during the past season and as a result many of the affected trees are expected to die. At present the epidemic in this area is believed to be in its declining stages. During the summer some unknown factor caused a very heavy mortality among the large larvae. Consequently, the eggs of the 1939-40 generation were very scarce.

An extensive new outbreak of Hemerocampa pseudotsugata was discovered in 1939 near Spray, Oregon, on the Umatilla National Forest. The affected trees were only partially defoliated. General observations revealed that the 1939-40 overwintering egg population was high, from which it is believed that there will be an increased amount of damage during 1940 in this new area.

Ellopia lugubrosa Hulst. On May 11 and again on July 26, follow-up examinations were made to determine the status of the hemlock looper in the Verlott Ranger District of the Mount Baker National Forest. No evidences of looper activity were found along the South Fork of the Stillaguamish River, where a heavy flight of adults was reported in October 1938.

INSECTS AFFECTING FOREST PRODUCTS

As heretofore, inquiries concerning insects in this group were most abundant, and within the group calls regarding carpenter ants were foremost again. A total of 107 requests were received, as compared with 89 in 1938.

Camponotus spp. Thirty-eight calls were received concerning carpenter ants in buildings. Specific determinations were made in only eight cases, as follows: C. herculeanus modoc Wheeler (5), C. maculatus vicinus Mayr (2), and C. laevigatus F. Smith (1).

In the course of the carpenter ant control study, it has been found that carpenter ants can usually be controlled by several known methods, the exact one, or ones, depending upon the particular conditions involved. Failure to obtain effective control is commonly

caused by improper application of control measures which have been recommended. Nevertheless, it is true that even the best known methods seem to fail at times. Hence there is still a definite need for the development of new and more effective methods of carpenter ant control.

Termites. Twenty-one cases of infestation by termites were reported. Sixteen of these were by Zootermopsis angusticollis Hagen and five were by Reticulitermes hesperus Banks. It is interesting to note in connection with the subterranean termite that our records show very few examples of infestation by this insect. In fact, more cases were reported during 1939 than in the preceding three-year period. Of the five cases reported last year, two of them involved serious infestations in houses.

The habits of Zootermopsis angusticollis came up for consideration again this year in connection with recommendations concerning the replacement of damaged piling under a large local flour mill. There is a heavy annual damage to piling under docks and warehouses along the Willamette River at Portland. In most cases rot and dampwood termites are associated in the damaged piling. The question is whether the termites play an entirely secondary role or whether they contribute materially to the destruction. It has been our impression, without supporting experimental evidence, that the termites are not primary and that they can be controlled by structural changes that will eliminate rot. A study is needed to determine whether or not this is actually the case.

Powder-post beetles. Reports of damage caused by these beetles continued to increase. Eleven cases of Lyctus infestation and six of various other powder-post beetles were reported. Flooring, furniture, and wooden novelties were among the articles that were attacked by Lyctus. Three instances of powder-post beetles infesting myrtle wood burls were brought to our attention. In one case Ptilinus basalis Lec., Polycaon confertus Lec., and Lyctus sp. were all present, and in the other two only P. basalis was involved. The myrtle wood burls are often stored for several years and represent a considerable investment to the owners of small wood-turning factories where the burls are worked up into novelty products.

Buprestis spp. Eight instances of infestation of Douglas fir in buildings by Buprestis were reported. Three were authenticated as the work of B. aurulenta L. and one as the work of B. langi (Mann.). In one case a woman brought suit for injuries sustained when she caught her foot in a larval mine on the surface of a floor board in a public building in Salem, Oreg. Although it was not determined whether any living larvae were present at the time of the accident, it was evident that the gallery was the work of Buprestis. Obviously the floor board had been in place for many years for it was laid with square nails of a type long out of use. An example of the possible importance of Buprestis was afforded at Longview, Wash., where a number of large wooden tanks used for wood pulp manufacture were seriously attacked by B. langi. Preliminary studies were initiated to determine the habits of these beetles. During the coming year detailed studies are planned.

Haplidus testaceus Lec. During the past year this cerambycid was recorded as a pest of wood products. In this case the beetles were found in lodgepole pine rafters of a rustic church that was built at Brewster, Wash., in 1935. In 1938 and 1939 boring dust became conspicuous on the church floor. During the summer of 1939 when an examination was made it was discovered that H. testaceus larvae had extensively mined the sapwood of most of the rafters and had extended their galleries into the heartwood about one inch. At that time there was no material weakening of the rafters but many living larvae were still present.

Wood borers emerging from cordwood. More than the usual number of wood borers emerging from cordwood in basements were reported. Fourteen requests were received concerning these insects. The following were definitely identified: Dendroctonus pseudotsugae Hopk. (1 case), Neoclytus conjunctus (Lec.) (2 cases), Phymatodes obscurus Lec. (1 case), Phymatodes vulneratus Lec. (1 case), Pseudopityophthorus pubipennis (Lec.) (1 case), and Xylotrechus nauticus (Mann.) (6 cases).

INSECTS AFFECTING SHADE AND ORNAMENTAL TREES

Nineteen requests were received concerning insects in this group.

Sternochaetus lapathi (L.). This introduced pest continued to be found attacking willows and poplars in the vicinity of Portland. Three reports of infestation were received.

Anisandrus pyri (Peck.) During April a rather unusual instance of damage caused by this ambrosia beetle was reported. In this case standard roses in a large nursery near Hillsboro, Oreg., were being seriously damaged. In May A. pyri was found attacking lilac in Puyallup, Wash.

Adelges cooleyi Gill. Five reports were received. It was reported from Douglas fir, Engelmann spruce, and Sitka spruce in Oregon and Washington. Defoliation of Sitka spruce around settlers' cabins on the Chugach Forest, Alaska, was also recorded.

Argyresthia cupressella Walsm. During April one case of defoliation of ornamental cypresses by this needle miner was reported. Recently A. cupressella has become very abundant on ornamental Cupressus in Portland. Because of the unsightly appearance of the attacked trees, several property owners have replaced their Cupressus with other evergreens that are not attacked by this needle miner.

GENERAL ENTOMOLOGY

A total of 70 entomological problems in other fields than forest entomology were received. Only one of these is of particular interest in this report.

Anabrus simplex Hald. An outbreak of the mormon cricket in eastern Oregon prompted six inquiries concerning control. Near the lower edge of pine growth on the Whitman National Forest the crickets caused considerable damage to ponderosa pine reproduction by stripping the foliage and eating many of the tender shoots (see fig. 3).

35 requests.

RESUME OF REQUESTS

Classification	Number of Requests
Insects affecting forest trees	33
Insects affecting forest products	107
Insects affecting shade and ornamental trees	19
General entomology	70
Unclassified	35
Total	264

OCCURRENCE OF REQUESTS BY MONTHS, 1937-1939

Month	1937	1938	1939	Average Distribution Percent
January	5	14	8	3.9
February	3	12	9	3.5
March	6	10	22	5.5
April	7	29	45	11.8
May	23	51	36	16.1
June	9	24	39	10.5
July	36	31	22	13.0
August	28	29	31	12.8
September	21	23	14	8.5
October	18	13	18	7.2
November	13	7	13	4.8
December	2	7	7	2.3
Unaccounted	1	-	-	.1
Total	172	250	264	100.0

APPENDIX 1

PUBLICATIONS, CIRCULARS, BULLETINS, ETC. SENT OUT DURING CALENDAR YEAR 1939

Number Sent	Article
6	Leaflet 101, "Injury to Buildings by Termites"
22	Leaflet 147, "House Ants"
2	Leaflet 149, "Silverfish"
3	Leaflet 184, "The Elm Leaf Beetle"
2	Circular 176, "Observations on the Satin Moth and Its Natural Enemies in Central Europe"
2	Circular 189, "Control of the Satin Moth by Spraying in Alternate Years"
2	Circular 459, "Effectiveness of Imported Insect Enemies of the Satin Moth"
15	Miscellaneous Pub. 273 (1939 edition) "Insect Enemies of Western Forests"
1	Department Bulletin 1182.
2	Farmers' Bulletin 1169, "Insects Injurious to Deciduous Shade Trees and Their Control"
2	Farmers' Bulletin 1472, "Preventing Damage by Termites or White Ants"
2	Farmers' Bulletin 1477, "Preventing Damage by Lyctus Powder-post Beetles"
2	Farmers' Bulletin 1495, "Insect Enemies of the Flower Garden"
2	Farmers' Bulletin 1582, "Protection of Log Cabins, Rustic Work, and Unseasoned Wood"
304	Mimeographed article, "Forest Insect Conditions in Oregon and Washington, 1933-1938"
2	Western pine beetle publications
1	Mountain pine beetle publication
1	Reprint of "Relative Susceptibility of Ponderosa Pines to Bark-beetle Attack"
1	"Climatic Cycles in Eastern Oregon as Indicated by Tree Rings".
.....	Several mimeographed articles, giving general information.
.....	Several forest conservation leaflets.
.....	Several articles answering requests for material on student theses.
374	

INDEX TO SPECIES

Species	Page
Adelges cooleyi Gill.	9
Anabrus simplex Hald.	9
Anisandrus pyri (Peck.)	9
Argyresthia cupressella Wsm.	9
Buprestis aurulenta L.	7
Buprestis langi (Mann.)	7
Camponotus herculeanus modoc Wheeler	5
Camponotus laevigatus F. Smith	5
Camponotus maculatus vicinus Mayr.	5
Cylindrocopturus sp.	3
Dendroctonus pseudotsugae Hopk.	2, 8
Ellopia lugubrosa Hulst.	5
Halisidota argentata Pack.	4
Haplidus testaceus Lec.	8
Hemerocampa pseudotsugata McD.	4
Lyctus sp.	7
Malacosoma constricta Stretch	4
Malacosoma disstria Hbn.	3
Malacosoma fragilis Stretch	4
Malacosoma pluvialis Dyar	4
Melanophila drummondi (Kby.)	2
Neoclytus conjunctus (Lec.)	8

Species (continued) Page

Phymatodes obscurus Lec. 8

Phymatodes vulneratus Lec. 8

Polycaon confertus Lec. 7

Pseudopityophthorus pubipennis (Lec.) 8

Ptilinus basalis Lec. 7

Reticulitermes hesperus Banks 6

Sternochaetus lapathi (L.) 8

Xylotrechus nauticus (Mann.) 8

Zootermopsis angusticollis Hagen 6

Fig. 1

Fig. 2

Partly grown larvae of Malacosoma disstria Hbn. migrating in search of food after completely defoliating willows near Kelso, Wash. — 1939.

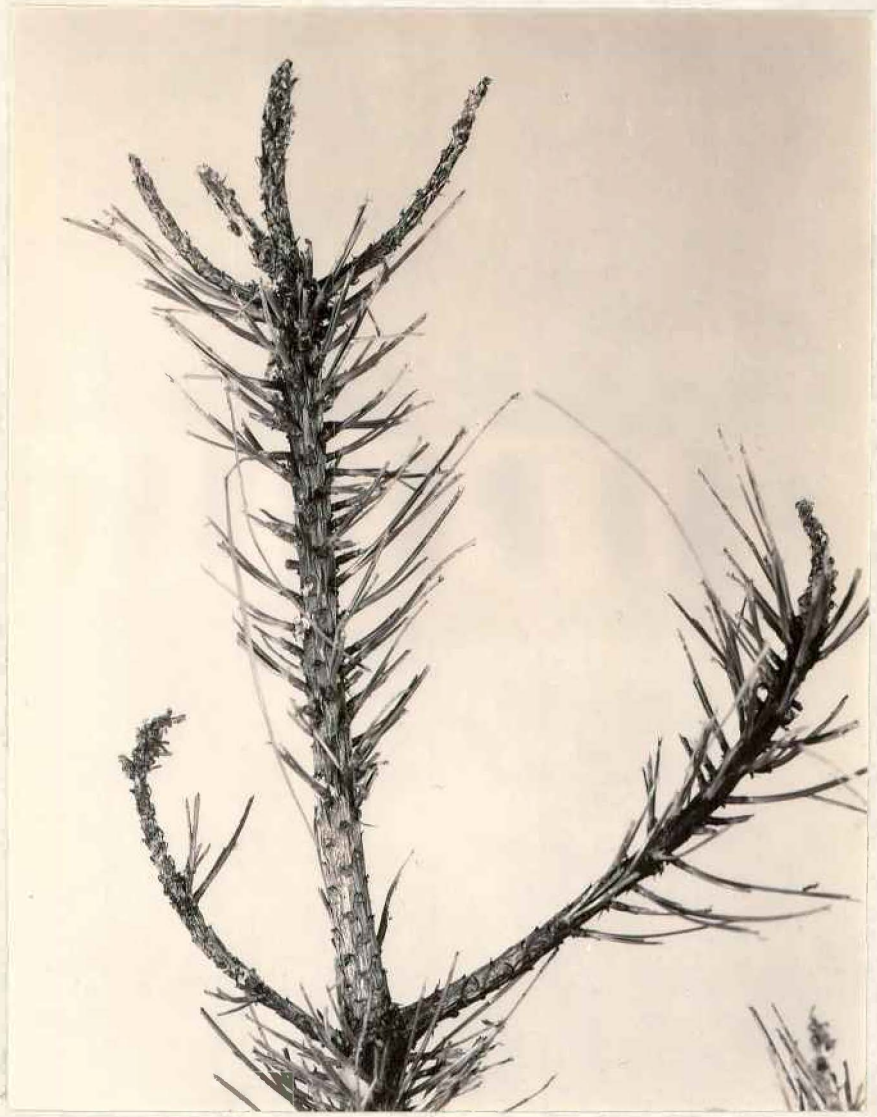

Fig. 3

Damage to ponderosa pine caused by feeding of Mormon crickets. Note effect of feeding upon the tender portion of the current year's growth.